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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/587,338

Applicant(s)

GOODWIN ET AL.

Examiner

RICHARD A. HUHNS

Art Unit

1796

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 December 2008.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
4a) Of the above claim(s) 15 is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-14 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☒ Claim(s) 1-15 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/ISD)
Paper No(s)/Mail Date 29 July 2008
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Restriction is required under 35 U.S.C. 121 and 372.
2. This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

Group I, claim(s) 1-14, drawn to a coating composition.

Group II, claim(s) 15, drawn to a method of using a coating composition.

3. The inventions listed as Groups I and II do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: the common technical feature, a composition according to claim 1, is known in the art. For example, US Patent No. 6,037,289 (herein "Chopin") discloses a coating comprising photocatalytic titanium dioxide (col 2 line 7), an opacifying agent (titanium dioxide), an inorganic binder (col 3 line 15), an organic binder (col 3 line 25), and a solvent (col 10 line 41).
4. A lack of unity *a posteriori* can be established if the common technical feature does not define a contribution over the prior art (see MPEP 1850). In this case, because the common technical feature is known in the art, the common technical feature does

not amount to a special technical feature. Because no special technical features can be established, there is lack of unity between the cited groups of inventions.

5. During a telephone conversation with Douglas Sorocco on 16 April 2009 a provisional election was made without traverse to prosecute the invention of Group 1, claims 1-14. Affirmation of this election must be made by applicant in replying to this Office action. Claim 15 is withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

6. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 4, 7, 8, 10, and 11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

9. A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c). Note the explanation given by the Board

of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949).

10. In the present instance:

- a. claim 4 recites the broad recitation of a range of 0.3 to 4.5, and the claim also recites a range of 0.5 to 3.6 which is the narrower statement of the range/limitation.
- b. claim 7 recites the broad recitation of a range of 5 to 80, and the claim also recites a range of 4 to 50 and a range of 10 to 40, which are the narrower statements of the ranges/limitations.
- c. claim 8 recites the broad recitation of a range of 0.5 to 20, and the claim also recites a range of 1 to 15 and a range of 3 to 12 which are the narrower statements of the ranges/limitations.
- d. claim 10 recites the broad recitation of at least one alkali metal silicates, and the claim also recites a "particular" group of silicates which is the narrower statement of the range/limitation.
- e. claim 11 recites the broad recitation of a range of 0.5 to 35, and the claim also recites a range of 1 to 30 and a range of 2 to 25 which are the narrower statements of the ranges/limitations.

11. Further as to claim 11: the claim recited percentages by weight "on a solid basis". It is unclear from the claim what component the amount of silicate is measured relative to.

Double Patenting

12. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

13. Claims 1-14 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 4, 6, and 9-10 of copending Application No. 10/587339. Although the conflicting claims are not identical, they are not patentably distinct from each other. US App '339 claims a coating composition according to the instant claims, comprising photocatalytic titanium dioxide

(see claim 1(a)), an opacifying agent (titanium dioxide), an inorganic binder (silicates, see claim 1(c)). US App '339 fails to claim a solvent. However, US App '339 discloses that the composition may comprise a solvent such as water (see the specification, page 4 line 11). US App '339 further fails to claim an organic binder. However, US App '339 discloses that the coating compositions are used as paints (see page 7 line 21). It is well known in the art to include organic binders, such as the presently claimed acrylic copolymers, in paint compositions. Therefore, it would have been obvious to a person of ordinary skill in the art to have included an organic binder in the composition of US App '339, thereby arriving at the present invention.

14. Case law holds that those portions of the specification which provide support for the patent claims may also be examined and considered when addressing the issue of whether a claim in an application defines an obvious variation of an invention claimed in the patent. In re Vogel, 422 F.2d 438, 164 USPQ 619,622 (CCPA 1970).

15. This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

16. Claims 1-14 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-21 of copending Application No. 12/022823. Although the conflicting claims are not identical, they are not patentably distinct from each other. US App '823 claims a coating composition comprising photocatalytic titanium dioxide (see claim 1(i)), an opacifying agent (calcium carbonate, see claim 1(iv)), an inorganic binder (silicates, see claim

1(iii)), and an organic binder (see claim 6). US App '823 fails to claim a solvent. However, US App '823 discloses that the composition may comprise a solvent such as water (see paragraph 66). Therefore, it would have been obvious to a person of ordinary skill in the art to have included a solvent in the composition claimed by US App '823, thereby arriving at the present invention.

17. Case law holds that those portions of the specification which provide support for the patent claims may also be examined and considered when addressing the issue of whether a claim in an application defines an obvious variation of an invention claimed in the patent. In re Vogel, 422 F.2d 438, 164 USPQ 619,622 (CCPA 1970).

18. This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

19. Claims 1-14 are directed to an invention not patentably distinct from claims 1-21 of commonly assigned Application No. 12/022823. Specifically, see paragraph 16 above.

20. The U.S. Patent and Trademark Office normally will not institute an interference between applications or a patent and an application of common ownership (see MPEP Chapter 2300). Commonly assigned Application No. 12/022823, discussed above, would form the basis for a rejection of the noted claims under 35 U.S.C. 103(a) if the commonly assigned case qualifies as prior art under 35 U.S.C. 102(e), (f) or (g) and the conflicting inventions were not commonly owned at the time the invention in this application was made. In order for the examiner to resolve this issue, the assignee can, under 35 U.S.C. 103(c) and 37 CFR 1.78(c), either show that the conflicting inventions

were commonly owned at the time the invention in this application was made, or name the prior inventor of the conflicting subject matter.

21. A showing that the inventions were commonly owned at the time the invention in this application was made will preclude a rejection under 35 U.S.C. 103(a) based upon the commonly assigned case as a reference under 35 U.S.C. 102(f) or (g), or 35 U.S.C. 102(e) for applications pending on or after December 10, 2004.

22. Claims 1-14 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-14 of copending Application No. 11/582763. Although the conflicting claims are not identical, they are not patentably distinct from each other. US App '763 claims a coating composition comprising photocatalytic titanium dioxide (see claim 1(a)), an opacifying agent (see claim 1(b)), an inorganic binder (see claim 1(c)), an organic binder (see claim 1(e)), and a solvent (see claim 1(f)). This is an anticipatory obviousness-type double patenting rejection.

23. This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

24. Claims 1-14 directed to an invention not patentably distinct from claims 1-14 of commonly assigned Application No. 11/582763. Specifically, see paragraph 22 above.

25. The U.S. Patent and Trademark Office normally will not institute an interference between applications or a patent and an application of common ownership (see MPEP Chapter 2300). Commonly assigned Application No. 11/582763, discussed above,

would form the basis for a rejection of the noted claims under 35 U.S.C. 103(a) if the commonly assigned case qualifies as prior art under 35 U.S.C. 102(e), (f) or (g) and the conflicting inventions were not commonly owned at the time the invention in this application was made. In order for the examiner to resolve this issue, the assignee can, under 35 U.S.C. 103(c) and 37 CFR 1.78(c), either show that the conflicting inventions were commonly owned at the time the invention in this application was made, or name the prior inventor of the conflicting subject matter.

26. A showing that the inventions were commonly owned at the time the invention in this application was made will preclude a rejection under 35 U.S.C. 103(a) based upon the commonly assigned case as a reference under 35 U.S.C. 102(f) or (g), or 35 U.S.C. 102(e) for applications pending on or after December 10, 2004.

27. Claims 1-14 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-17 of copending Application No. 11/662484. Although the conflicting claims are not identical, they are not patentably distinct from each other. US App '484 claims a coating composition comprising photocatalytic titanium dioxide (see claim 1(a)), an opacifying agent (see claim 1(b)), an inorganic binder (see claim 1(d)), and an organic binder (see claim 15). US App '484 fails to disclose a solvent. However, US App '484 discloses that the composition may comprise a solvent (see the specification, page 7 line 10). Therefore, it would have been obvious to a person of ordinary skill in the art to have

used a solvent in the composition claimed by US App '484, thereby arriving at the present invention.

28. Case law holds that those portions of the specification which provide support for the patent claims may also be examined and considered when addressing the issue of whether a claim in an application defines an obvious variation of an invention claimed in the patent. In re Vogel, 422 F.2d 438, 164 USPQ 619,622 (CCPA 1970).

29. This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

30. Claims 1-14 directed to an invention not patentably distinct from claims 1-17 of commonly assigned Application No. 11/662484. Specifically, see paragraph 27 above.

31. The U.S. Patent and Trademark Office normally will not institute an interference between applications or a patent and an application of common ownership (see MPEP Chapter 2300). Commonly assigned Application No. 11/662484, discussed above, would form the basis for a rejection of the noted claims under 35 U.S.C. 103(a) if the commonly assigned case qualifies as prior art under 35 U.S.C. 102(e), (f) or (g) and the conflicting inventions were not commonly owned at the time the invention in this application was made. In order for the examiner to resolve this issue, the assignee can, under 35 U.S.C. 103(c) and 37 CFR 1.78(c), either show that the conflicting inventions were commonly owned at the time the invention in this application was made, or name the prior inventor of the conflicting subject matter.

32. A showing that the inventions were commonly owned at the time the invention in this application was made will preclude a rejection under 35 U.S.C. 103(a) based upon

the commonly assigned case as a reference under 35 U.S.C. 102(f) or (g), or 35 U.S.C. 102(e) for applications pending on or after December 10, 2004.

Claim Rejections - 35 USC § 102

33. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

34. Claims 1-10 and 12-13 are provisionally rejected under 35 U.S.C. 102(e) as being anticipated by copending Application 11/662484 which has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the copending application, it would constitute prior art under 35 U.S.C. 102(e), if published under 35 U.S.C. 122(b) or patented. This provisional rejection under 35 U.S.C. 102(e) is based upon a presumption of future publication or patenting of the copending application 11/662484.

35. This provisional rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the

copending application was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131. This rejection may not be overcome by the filing of a terminal disclaimer. See *In re Bartfeld*, 925 F.2d 1450, 17 USPQ2d 1885 (Fed. Cir. 1991).

36. As to claims 1 and 4: US App '484 discloses a coating composition comprising:

- f. photocatalytic titanium dioxide (see claim 1(a)),
- g. an opacifying agent (see claim 1(b)),
- h. an inorganic binder (see claim 1(d)),
- i. an organic binder (see claim 15), and
- j. a solvent (see the specification, page 7 line 10).

37. US App '484 further discloses the use of the titanium dioxide/organic binder in a ratio of 0.3 to 4.5 (see the specification, page 6 line 20).

38. As to claims 2 and 3: US App '484 discloses that the organic binder may be a acrylic copolymer, such as a styrene/acrylic copolymer (see the specification, page 6 line 11).

39. As to claims 5 and 6: US App '484 discloses that the titanium dioxide may be of the anatase type (see the specification, page 3 line 13).

40. As to claim 7: US App '484 discloses that the titanium dioxide particles can have a mean size of 50 nm (see page 3 line 21).

41. As to claim 8: US App '484 discloses that the titanium dioxide can be 0.1-25% by weight of the composition (see page 4 lines 1-2).

42. As to claim 9 and 10: US App '484 discloses that the composition may further comprise Na-Al-silicate (see page 7 line 15).
43. As to claim 12: US App '484 discloses that the composition may further comprise TiO₂ pigment (see page 7 line 16).
44. As to claim 13: US App '484 discloses that the solvent may be water (see page 7 line 9).
45. In view of this discussion, it is evident that claims 1-10 and 12-13 stand properly anticipated by US App '484.
46. Claims 1, 5-8, and 13 rejected under 35 U.S.C. 102(b) as being anticipated by US Patent Application No. 2002/0005145 (herein "Sherman").
47. As to claim 1: Sherman discloses a coating composition which comprises:
- k. photocatalytic titanium dioxide (see paragraph 114);
 - l. an opacifying agent (see "inorganic pigments" in paragraph 114);
 - m. an inorganic binder (see "silicate" in paragraph 114; and paragraph 87);
 - n. an organic binder (see "polymeric binders" in paragraph 244);
 - o. a solvent (see paragraph 236).
48. Sherman further discloses that the photocatalytic titanium dioxide is present in an amount of greater than 10% of the amount of the polymeric binder (see paragraph 244).
49. As to claims 5 and 6: Sherman discloses that the photocatalytic titanium dioxide may be of the crystalline anatase type (see paragraph 114).

50. As to claim 7: Sherman discloses that the photocatalytic titanium dioxide particles may have a size of about 50 nm (see paragraph 8).
51. As to claim 8: Sherman discloses that the titanium-containing colloidal particles may constitute 50 wt% of the composition (see paragraph 242). As applied above in paragraph 48, the photocatalytic titanium dioxide is present in an amount of greater than 10% of the amount of the polymeric binder. Such a composition has about 5 wt% of photocatalytic titanium based on the weight of the total composition.
52. As to claim 13: Sherman discloses the solvent water (see paragraph 236).
53. In view of this discussion, it is evident that claims 1, 5-8, and 13 stand properly anticipated by Sherman.

Claim Rejections - 35 USC § 102, 103

54. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

55. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
56. Claims 9, 10, and 14 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Sherman, as applied above.
57. The discussion with respect to Sherman as set forth above in paragraphs 47-48 is incorporated here by reference. As applied above, Sherman discloses a composition according to claim 1.
58. As to claims 9 and 10: Sherman further discloses that the inorganic binder can be "silicate" (see paragraph 114), which is generally understood to include alkali silicates as is presently recited. Therefore, it appears to be inherent that Sherman discloses alkali silicates, including potassium, sodium, or lithium silicates as is presently recited.
59. In the alternative, it is within the ordinary level of skill in the art to identify and use known silicates. Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the present invention to use any type of silicate for the composition taught by Sherman, including an alkali silicate such as a potassium, sodium, or lithium silicate as is presently recited, thereby arriving at the presently claimed invention.
60. As to claim 14: Sherman discloses that the composition may be used for paints (see paragraph 87). While there is no disclosure that the composition of Sherman is a silicate emulsion paint as presently claimed, applicants attention is drawn to MPEP 2111.02 which states that "if the body of a claim fully and intrinsically sets forth all the limitations of the claimed invention, and the preamble merely states, for example, the purpose or intended use of the invention, rather than any distinct definition of any of the

claimed invention's limitations, then the preamble is not considered a limitation and is of no significance to claim construction". Further, MPEP 2111.02 states that statements in the preamble reciting the purpose or intended use of the claimed invention must be evaluated to determine whether the purpose or intended use results in a structural difference between the claimed invention and the prior art. Only if such structural difference exists, does the recitation serve to limit the claim. If the prior art structure is capable of performing the intended use, then it meets the claim.

61. It is the examiner's position that the limitation "silicate emulsion paint" does not state any distinct definition of any of the claimed invention's limitations and further that the purpose or intended use, i.e. a silicate emulsion paint, recited in the present claims does not result in a structural difference between the presently claimed invention and the prior art paint composition and further that the prior art structure which is a titanium dioxide-containing composition identical to that set forth in the present claims is capable of performing the recited purpose or intended use.

62. In the alternative: While Sherman fails to specifically name a silicate emulsion paint as is presently recited, it is within the ordinary level of skill in the art use known compositions for well known types of paint. Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the present invention to have used the composition taught by Sherman for any appropriate type of paint, including a silicate emulsion paint as is presently recited, thereby arriving at the presently claimed invention.

63. Claim 14 is provisionally rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over US App '484, as applied above. which has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the copending application, it would constitute prior art under 35 U.S.C. 102(e), if published under 35 U.S.C. 122(b) or patented. This provisional rejection under 35 U.S.C. 102(e) and 103(a) is based upon a presumption of future publication or patenting of the copending application 11/662484.

64. This provisional rejection under 35 U.S.C. 102(e) and 103(a) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the copending application was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131. This rejection may not be overcome by the filing of a terminal disclaimer. See *In re Bartfeld*, 925 F.2d 1450, 17 USPQ2d 1885 (Fed. Cir. 1991). This rejection under 35 U.S.C. 103(a) might also be overcome by showing that the copending application is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(l)(1) and § 706.02(l)(2).

65. The discussion with respect to US App '484 as set forth above in paragraphs 36-37 is incorporated here by reference.

66. As to claim 14: As applied above, US App '484 discloses compositions according to instant claim 1. While there is no disclosure that the composition of US App '484 is a silicate emulsion paint as presently claimed, applicants attention is drawn to MPEP 2111.02 which states that "if the body of a claim fully and intrinsically sets forth all the

limitations of the claimed invention, and the preamble merely states, for example, the purpose or intended use of the invention, rather than any distinct definition of any of the claimed invention's limitations, then the preamble is not considered a limitation and is of no significance to claim construction". Further, MPEP 2111.02 states that statements in the preamble reciting the purpose or intended use of the claimed invention must be evaluated to determine whether the purpose or intended use results in a structural difference between the claimed invention and the prior art. Only if such structural difference exists, does the recitation serve to limit the claim. If the prior art structure is capable of performing the intended use, then it meets the claim.

67. It is the examiner's position that the limitation "silicate emulsion paint" does not state any distinct definition of any of the claimed invention's limitations and further that the purpose or intended use, i.e. a silicate emulsion paint, recited in the present claims does not result in a structural difference between the presently claimed invention and the prior art paint composition and further that the prior art structure which is a titanium dioxide-containing composition identical to that set forth in the present claims is capable of performing the recited purpose or intended use.

68. In the alternative: While US App '484 fails to specifically name a silicate emulsion paint as is presently recited, it is within the ordinary level of skill in the art use known compositions for well known types of paint. Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the present invention to have used the composition taught by US App '484 for any appropriate type of paint, including a silicate

emulsion paint as is presently recited, thereby arriving at the presently claimed invention.

Claim Rejections - 35 USC § 103

69. Claim 11 is provisionally rejected under 35 U.S.C. 103(a) as being unpatentable over US App '484, as applied above which has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the copending application, it would constitute prior art under 35 U.S.C. 102(e) if published or patented. This provisional rejection under 35 U.S.C. 103(a) is based upon a presumption of future publication or patenting of the conflicting application 11/662484.

70. This provisional rejection might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the copending application was derived from the inventor of this application and is thus not the invention "by another," or by a showing of a date of invention for the instant application prior to the effective U.S. filing date of the copending application under 37 CFR 1.131. This provisional rejection of claim 11 under 35 U.S.C. 103(a) might also be overcome by showing that the copending application is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(I)(1) and § 706.02(I)(2). (Note that the exclusionary provision under 103(c) does not apply to anticipatory rejections over US App '484 as set forth elsewhere in the present action.)

71. The discussion with respect to US App '484 as set forth above in paragraphs 36-37 and 42 is incorporated here by reference.

72. As to claim 11: As applied above, US App '484 discloses the composition of claim 10. US App '484 fails to name a specific amount of silicate as is presently recited. It is the examiner's position that the mass composition of silicates is a result effective variable because changing it will clearly affect the type of product obtained, including the composition's photocatalytic activity and the coating's performance properties. See MPEP § 2144.05 (B). Case law holds that "discovery of an optimum value of a result effective variable in a known process is ordinarily within the skill of the art." See *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the present invention to have used any appropriate amount of silicate for the composition of Sherman to achieve desired results, including an amount within the scope of the present claims.

73. Claims 2-4 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sherman.

74. The discussion with respect to Sherman as set forth above in paragraphs 47-48 is incorporated here by reference. As applied above, Sherman discloses a composition according to claim 1.

75. As to claims 2 and 3: Sherman discloses that the polymeric binders can be acrylic or styrene-based polymers (see paragraph 205). While Sherman does not specifically name acrylic ester copolymers or styrene-acrylic copolymers as are

presently recited, it is within the ordinary level of skill in the art to identify and use common polymers, such as acrylic or styrene-acrylic copolymers. Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the present invention to have used any well known type of acrylic polymer, including an acrylic ester copolymer or a styrene-acrylic copolymer as are presently recited, for the composition taught by Sherman, thereby arriving at the presently claimed invention.

76. As to claim 4: As set forth above in paragraphs 47-48, Sherman discloses that the photocatalytic titanium dioxide is present in an amount of greater than 10% of the amount of the polymeric binder, giving a TiO_2 /binder ratio of 0.1. While Sherman fails to disclose a ratio of 0.3 to 4.5 as is presently recited, Sherman teaches that the catalytic activity is related to the amount of titanium dioxide present in the composition (see for example, paragraph 99). Therefore, a person of ordinary skill would have been motivated to have used a larger amount of titanium dioxide for the composition taught by Sherman to achieve increased photocatalytic activity. Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the present invention to have used a larger amount of titanium dioxide, including an amount of titanium dioxide which gives a TiO_2 /binder ratio of 0.3 to 4.5 as is presently recited, thereby arriving at the presently claimed invention.

77. As to claim 11: The discussion with respect to Sherman as set forth above in paragraphs 57-59 is incorporated here by reference. As applied above, Sherman discloses or suggests the composition of claim 10. Sherman further teaches that the composition may include binders, carriers, and the like (see paragraph 87). As applied

above in paragraphs 58-59, Sherman teaches that the composition may include silicates. It is the examiner's position that the mass composition of silicates is a result effective variable because changing it will clearly affect the type of product obtained, including the composition's photocatalytic activity and the coating's performance properties. See MPEP § 2144.05 (B). Case law holds that "discovery of an optimum value of a result effective variable in a known process is ordinarily within the skill of the art." See *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the present invention to have used any appropriate amount of silicate for the composition of Sherman to achieve desired results, including an amount within the scope of the present claims.

78. As to claim 12: Sherman discloses that the composition may comprise inorganic pigments (see paragraph 114), and that the composition may be used for paints (see paragraph 87). Sherman fails to specifically name the inclusion of non-photocatalytic TiO₂ particles in the composition. However, it is well known in the art that TiO₂ is used as a pigment for paint, and that typical paint-grade TiO₂ particles are not nanoparticles and thus are not photocatalytic. Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the present invention to have made a paint from the composition taught by Sherman by combining it with a typical paint-grade TiO₂ particles which are not photocatalytic, thereby arriving at the presently claimed invention.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RICHARD A. HUHN whose telephone number is (571) 270-7345. The examiner can normally be reached on Monday to Friday, 7:30 AM to 5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571) 272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/R. A. H./
Examiner, Art Unit 1796

/Vasu Jagannathan/
Supervisory Patent Examiner, Art Unit 1796

